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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,941	06/28/2001	Michael John Davis	60LT01103	1253
23413	7590	03/01/2005	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			ROBERTSON, JEFFREY	
			ART UNIT	PAPER NUMBER

1712

DATE MAILED: 03/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/681,941

Applicant(s)

DAVIS ET AL.

Examiner

Jeffrey B. Robertson

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28,33-35,38 and 39 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-11,14-17,20,21,23-28,33-35,38 and 39 is/are rejected.
7) ☒ Claim(s) 12,13,18,19 and 22 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11, 14-17, 20, 21, 23-28, 33-35, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clough (U.S. Patent No. 6,518,362) in view of Mizuno et al. (U.S. Patent No. 5,017,663).

The reference teaches a curable composition comprising polyarylene ether, uncured epoxy resin, and a compatibilizer that includes functionalized block copolymers comprising styrene including maleated Kraton polymers. See col. 3, line 20 through col. 5, line 25 and col. 9, lines 39-58. The compositions are prepared by melt blending the components at low temperature so as to not cure the epoxy resin. See col. 10, line 44 through col. 11, line 10. As suggested by the reference, it would have been obvious to combine a polyarylene ether, epoxy resin, a maleated block copolymer comprising styrene Kraton compatibilizer and aromatic polyamine curing agent by melt blending at low temperature to obtain a curable molding composition. Variation in order of addition of components and blending temperature would have been obvious modifications to one of ordinary skill in the art in order to obtain the blend with uncured epoxy resin when using the amine curing agents.

Art Unit: 1712

Mizuno teaches compatibilized polymer blends containing polyphenylene ether resins, epoxy resins, and styrene containing compatibilizers. See col. 2, lines 24-61, col. 13, lines 1-25, and col. 16, line 52 through col. 17, line 15. In columns 23-24, Table 3, Mizuno teaches that maleated styrene block copolymers are used where the block copolymer is maleated styrene-butadiene-styrene. The maleated copolymer are Krayton polymers.

Mizuno and Clough are analogous art in that they both come from the same field of endeavor, namely thermoplastic polyphenylene ether compositions that contain block copolymers and epoxy resins.

It would have been obvious to one of ordinary skill in the art to use the specific maleated copolymers set forth in Mizuno in the compositions of Clough. The motivation would have been that Clough teaches a genus of functionalized block copolymers comprising styrene including maleated Kraton polymers. One of ordinary skill in the art would have turned to Mizuno for specific species to use for maleated Kraton polymers.

Response to Arguments

3. Applicant's arguments have been considered but are not persuasive. Applicant argues that there is no motivation to combine the Clough and Mizuno references because they are not from the same field of endeavor and that Mizuno is not reasonably pertinent to the particular problem with which applicant is involved. Applicant also argues that the examiner has used impermissible hindsight to select epoxy compounds and maleic-anhydride modified hydrogenated styrene-butadiene-styrene block

Art Unit: 1712

copolymers from the teachings of Mizuno. Specifically, applicant argues that because Mizuno teaches thermoplastic compositions that do not use a curing step and Clough teaches curable compositions, the patents do not pertain to the same field of endeavor.

The examiner disagrees. Clough teaches in column 4, lines 61-65, that *any* functionalized block copolymers containing styrene can be used as compatibilizers, and expressly teaches that maleated KratonTM polymers are used for this purpose.

Therefore, one of ordinary skill in the art would have looked to compatibilizers of the maleated KratonTM type that are used to compatibilize polyphenylene ether compositions. Presumably, any of these polymers would be sufficient. The Mizuno reference provides support for the selection of specific compatibilizers claimed by applicant in the context of polyphenylene ether compositions.

The examiner's position is that applicant has construed the field of endeavor of the Clough and Mizuno patents too narrowly and therefore the examiner stands by his statement in the rejection set forth in the previous office action and repeated above. Mizuno is relied upon to show specific polymers preferred by Clough as compatibilizers and is relevant to the art because it contains compatibilized blends of polyphenylene ether. Mizuno is not relied upon for a selection of epoxy compounds as suggested by applicant. In addition, though Mizuno sets forth a number of different compatibilizers, the reference is relied upon for the teaching of compatibilizers of the maleated KratonTM type as exemplified in Table 3 of the Mizuno reference to show a specific example of that genus of the teachings of Clough. The reference is not relied upon for the general disclosure of compatibilizers themselves.

Also, there is a common problem addressed by both references in relation to polyphenylene ether compositions, namely the compatibility of these polyphenylene ethers with other polymers. Therefore, the examiner's position is that the references are sufficiently related to be from the same filed of endeavor and thus are analogous art. In addition, in view of the above comments, the examiner disagrees that impermissible hindsight was used to combine the two references.

Allowable Subject Matter

4. Claims 12, 13, 18, 19, and 22 are allowed.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

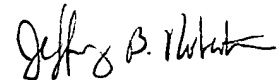
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey B. Robertson whose telephone number is (571) 272-1092. The examiner can normally be reached on Mon-Fri 7:00-3:00.

Art Unit: 1712

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jeffrey B. Robertson
Primary Examiner
Art Unit 1712

JBR